

## REMARKS

Claim 1, 13, and 16 has been amended. In the amendment, the term "a cyano group" has been deleted from alternative expressions, and the redundant definitions of  $R^{01}$  and  $R^{02}$ , " $R^{01}$  and  $R^{02}$  each being selected from the group consisting of a hydrogen atom, an alkyl group having 1 to 6 carbon atoms, a halogen atom, and a cyano group, provided that both  $R^{01}$  and  $R^{02}$  are not hydrogen atoms at the same time", have been deleted. This amendment does not present new matter since the definitions of  $R^{01}$  and  $R^{02}$ , " $R^{01}$  represents a hydrogen atom, an alkyl group having 1 to 6 carbon atoms, or a halogen atom; and  $R^{02}$  represents an alkyl group having 1 to 6 carbon atoms, or a halogen atom", are described in the claims, and fully overlaps the deleted definitions except the deleted "cyano group"; for example, in the remaining definitions, both  $R^{01}$  and  $R^{02}$  are not hydrogen atoms at the same time since  $R^{02}$  is not a hydrogen atom. Accordingly, the scope of the formula (M) is unchanged except for the deleted "cyano group". New claims 22 to 27 have been added which further limit the alternative expressions described in claims 1, 13, and 16. Upon entry of the amendment, claims 1 to 27 will be pending in the application.

### I. Response to Claim Rejection under 35 U.S.C. §103

#### A. Fukui et al. and Hackh's Chemical Dictionary

Claims 1 and 3-15 have been rejected under 35 U.S.C. § 103 (a) as being unpatentable over the combination of Fukui et al. and The Hackh's Chemical Dictionary 4th edition.

Applicants respectfully submit that the combination of Fukui et al. and Hackh's Chemical Dictionary does not disclose the photothermographic material of the claimed invention. The Examiner has admitted that Fukui et al. does not disclose that at least

one of  $R^{01}$  and  $R^{02}$  in formula (M) is different from a hydrogen atom. In order to cure the deficiency, the Examiner has relied on the disclosure of The Hackh's Chemical Dictionary 4th edition. The Examiner states "the term, butadiene, encompasses the scope of the butadiene that the conjugate carbon atom can be substituted with a group other than hydrogen atom."

The Applicant respectfully disagrees. The Hackh's Chemical Dictionary 4th edition only states as follows:

butadiene-\* Bivinyll. bromo-\* Bromoprene. chloro-\* Chloroprene. methyl-\* Isoprene. b. dicarboxylic acid. Muconic acid.

This recitation merely states that budadiene corresponds to bivinyll, that bromobutadiene is also called bromoprene, that chlorobutadiene is also called chloroprene, that methylbutadiene is also called isoprene, and that the combination of butadinene and two carboxyl groups is called muconic acid. In short, compounds relevant to butadiene are cited for reference purpose, but the compounds are not involved in the definition of butadiene. Accordingly, this recitation, by no means, states that bromoprene, chloroprene, isoprene, muconic acid, and the like are within the scope of the definition of butadiene.

Based on common understanding in the art, the term "butadiene" refers to  $CH_2=CHCH=CH_2$ , which is non-substituted. Such notion is supported by various dictionaries including "Kagaku Daijiten" (Comprehensive Chemical Dictionary) (Kyoritsu Shuppan Co., Ltd.), p. 817, WEBSTER'S New Collegiate Dictionary, p. 150, and RANDOMHOUSE WEBSTER'S COLLEGE DICTIONARY, p. 179, the copies of which are submitted herewith. The first dictionary states as follow:

"butadiene (butadiene in English; Butadien in German)

(1) referring to the chained hydrocarbons having two double bonds whose carbon number is four, consisting of the two isomers of 1,2-butadiene and 1,3-butadiene. Since the latter isomer is much important industrially, butadiene often refers to 1,3-butadiene. Regarding 1,2-butadiene, the item for methylallene can be referenced."

The other two dictionaries also state that butadiene refers to  $C_4H_6$ . In addition,

the meaning of the term "butadiene" used in Fukui et al. must be non-substituted butadiene since the description of Fukui would be ambiguous otherwise. For example, butadiene is used in the preparation of SBR latex in paragraph [0361] of Fukui. If the scope of butadiene included many compounds, there would be no way to understand what compound is used in Examples of Fukui. For the reasons described above, Applicant respectfully submits that the Examiner's interpretation of the term "butadiene" is improper.

The Examiner has further stated "Closely related homologs, analogs, isomers in chemistry may create a prima facie case of obviousness."

However, the copolymer used in the present invention provides remarkable improvement of image storability that is unexpected from the combination of Fukui et al. and The Hackh's Chemical Dictionary 4th edition, as is clarified in Examples described in the specification of the present application, and in the Declaration submitted herewith. In the Declaration, the copolymers according to the invention provided at least 2 times better image storability than the copolymer disclosed in Fukui et al. Therefore, Applicant respectfully submits the presently claimed invention is neither taught nor suggested by the combination of Fukui et al. and The Hackh's Chemical Dictionary 4th edition.

As described above, the combination of Fukui et al. and The Hackh's Chemical Dictionary 4th edition neither teaches nor suggests the presently claimed invention. Accordingly, Applicant respectfully requests withdrawal of the rejection.

**B. Fukui et al., Hackh's Chemical Dictionary, and Ezoe et al. or Goto or Ohzeki.**

Claim 2 has been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Fukui et al. and Hackh's Chemical Dictionary in view of either Ezoe or Goto or Ohzeki et al. The withdrawal of the rejection is respectfully requested for the reasons set out above because of its dependency.

**C. Fukui et al., Hackh's Chemical Dictionary, and  
Encyclopedia of Chemical Technology, Forth Edition**

Claims 16-21 have been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Fukui et al., Hackh's Chemical Dictionary, and Encyclopedia of Chemical Technology, Forth Edition. The Examiner has relied on the combination of Fukui et al. and Hackh's Chemical Dictionary for explaining how a person in the art is motivated to use the polymer of the invention. However, the combination of Fukui et al. and Hackh's Chemical Dictionary neither teaches nor suggests the polymer of the invention as described in the above item A. Encyclopedia of Chemical Technology, Fourth Edition cannot cure the deficiency since it does not teach the polymer of the invention. Therefore, the combination of Fukui et al., Hackh's Chemical Dictionary, and Encyclopedia of Chemical Technology, Forth Edition neither teaches nor suggests the presently claimed invention.

Accordingly, withdrawal of the rejection is respectfully requested.

**II Conclusion**

In view of the foregoing remarks, it is submitted that all of the claims currently pending in the application are in condition for allowance. Early and favorable action is respectfully requested.

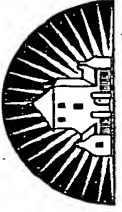
Respectfully submitted,



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# RANDOM HOUSE WEBSTER'S COLLEGE DICTIONARY

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## bustier to butterfly shell

179

often insolently, as a familiar term of address to a man or woman. **Watch it, Buster!** 4. a spree. 5. **BRONCOBUSTER**. [1825-35, Amer.]

**bustler** (būs tyāl), *n.* a woman's close-fitting, sleeveless, strapless dress, usu. with boning to give it shape, worn as a blouse. [1975-80; < *bustle* (bus'al), *v.*, -tled, -tling, *n.* -v.i. 1. to move or act with a show of energy (often fol. by *about*): *bustling about in the street*. 2. to abound in something: *an office bustling with activity*. 3. to cause to bustle; hustle. -*n.* 4. energetic and often noisy activity. [1615-25; ME *bustelen* to hurry along] -**bustler**, *n.* -**bustling**, *adv.*

**bustle** (bus'al), *n.* a projecting pad or framework formerly worn under the back of a woman's skirt to support and display the drape of the fabric. [1780-90; orig. uncert.] -**bustled**, *adj.*

**bustline** (bus'tlin), *n.* 1. the outline or shape of a woman's bust. 2. the part of a garment covering the breasts. [1935-40]

**bus topology**, *n.* Computers. an arrangement of computers on a local-area network in which each computer is connected to a central cable through which data is channeled.

**bus-up**, *n.* Informal. 1. a separation or dissolution, as of a marriage; breakup. 2. a noisy party. 3. Brit. a quarrel. [1840-50]

**busy** (bus'tē), *adj.*, **bustier**, **bustiest**. (of a woman) having a large bust; bosomy. [1940-45] -**bustiness**, *n.*

**busy** (biz'ē), *adj.*, **busier**, **busiest**, *v.*, **bustied**, **busying**. -*adj.* 1. actively and attentively engaged, esp. in work. 2. not at leisure; otherwise engaged: *He's busy and can't see you*. 3. full of activity: *a busy life*. 4. (of a telephone line) in use. 5. meddlesome; prying. 6. cluttered with small, fussy details: *The rug is too busy for this room*. -*v.t.* 7. to keep occupied; make or keep busy. [bef. 1000; ME *busi*, OE *bysig*, *bisig*] -**busily**, *adv.* -**busyness**, *n.*

**busybody** (biz'ē bod'ē), *n.*, *pl.* **bod-ies**, a person who pries into or meddles in the affairs of others. [1520-30]

**busy signal**, *n.* (on a telephone line) a rapid succession of buzzing tones, indicating that the number called is in use. [1890-95]

**busy work** (biz'ē wŭrk'), *n.* work often of little productive value assigned so that a person will be occupied or look busy. [1840-50]

**but** (but; unstressed bat), *conj.* 1. on the contrary: *My brother went, but I did not*. 2. and yet; nevertheless: *strange but true*. 3. except; save: *did nothing but complain*. 4. without the circumstance that: *It never rains but it pours*. 5. otherwise than: *There is no hope but by prayer*. 6. that (used esp. after *doubt*, *deny*, etc., with a negative): *I don't doubt but you'll do it*. 7. that ... not: *No leaders ever existed but they were optimists*. 8. (used to introduce an exclamatory expression): *But that's wonderful!* 9. Informal. than: *It no sooner started raining but that's wonderful!* 10. with the exception of: *No one replied but me*. 11. other than: *nothing but trouble*. -*adv.* 12. only; just: *There is but one answer*. -*n.* 13. **buts**, reservations or objections: *You'll do as but one answer*. -*Idiom.* 14. **but for**, except for; were you're told, no but about it. -*Usage.* When *but* is understood as a conjunction and the pronoun following it is understood as the subject of an independent clause, the pronoun is in the subjective case: *Everyone lost faith in the plan but she (did not lose faith)*. In virtually identical contexts, when *but* is understood as a preposition, the pronoun following it is in the objective case: *Everyone lost faith but her*. The prepositional use is more common. When *but* and its following pronoun occur near the beginning of a sentence, the subjective case often appears: *Everyone but she lost faith in the plan*. See also *AND*, *DOUBT*, *THAN*.

**butadiene** (byōō'tā dī'ēn, -dī ēn'), *n.* a colorless, flammable gas, C<sub>4</sub>H<sub>6</sub>, used chiefly in the manufacture of rubber and paint and in organic synthesis. [1895-1900; BUTA(NE) + DI- + -ENE]

**butane** (byōō'tān, byōō tān'), *n.* a colorless, flammable gas, C<sub>4</sub>H<sub>10</sub>, used chiefly in the manufacture of rubber and as fuel. [1870-75]

**butanol** (byōō'tān ōl', -ol'), *n.* BUTYL ALCOHOL. [1890-95]

**butch** (bōoch), *adj.* 1. *Slang*. a. (of a woman) having traits of behavior usu. associated with males. b. (of a male) exaggeratedly masculine in manner. 2. of or designating a haircut in which the hair is closely cropped. -*n.* 3. *Slang*. a butch person. [1940-45]

**butcher** (bōoch'ar), *n.* 1. a retail or wholesale dealer in meat. 2. a person who slaughters certain animals or dresses their flesh for food or market. 3. a person guilty of brutal or indiscriminate murder. 4. a vendor who hawks refreshments, newspapers, etc., as on a train. -*v.t.* 5. to slaughter or dress (animals) for market. 6. to kill indiscriminately or brutally. 7. to bungle; botch: *to butcher a job*. [1250-1300; ME *bocher* < AF: OF *bo(u)chier*, der. of *bo(u)c* he-goat] -**butcherer**, *n.* -*Syn.* See SLAUGHTER.

**butcher-bird** (bōoch'ar būrd'), *n.* 1. any of several Eurasian or North American shrikes of the genus *Lanius*. 2. any of various large, heavy-billed, highly vocal songbirds of the genus *Cracticus*, of Australia and New Guinea. [1660-70]

**butcher block**, *n.* a slab of wood formed by bonding or gluing together thick laminated strips of wood in alternating light and dark shades. [1835-45] -**butcher-block**, *adj.*

**butcher's broom**, *n.* a shrubby European evergreen, *Ruscus aculeatus*, of the lily family, used for making brooms. [1555-65]

**butchery** (bōoch'ar ē), *n.*, *pl.* **-eries**. 1. brutal or wanton slaughter of animals or humans. 2. the trade of a butcher. 3. Brit. a slaughterhouse. 4. the act of bungling or botching. [1300-50; ME < AF, MF] **Bute** (byōōt), *n.* 1. Also, **Bute-shire** (byōōt'shēr, -shēr), a historic

2. an island in the Firth of Clyde, in SW Scotland: part of the county Bute. 7733; 50 sq. mi. (130 sq. km).

**bu-tene** (byōō'tēn), *n.* BUTYLENE.

**bu-te-o** (byōō'tē ō), *n.*, *pl.* **-te-os**. any of various soaring hawks of the genus *Buteo*, of both the Old and New Worlds, having broad wings and a wide, rounded tail. [1905-10; < NL: *L. būteō* a kind of hawk or falcon] -**bu-te-o-nine** (-ānīn', -nīn), *adj.*, *n.*

**but-ler** (but'lār), *n.* 1. the chief male servant of a household, usu. in charge of wines and liquors, the serving of meals, and the supervision of other servants. [1250-1300; ME *buteler* < AF *butuiller*; see *BOTTLE*]

**But-ler** (but'lār), *n.* 1. Benjamin Franklin, 1818-93, U.S. politician and Union general in the Civil War. 2. Samuel, 1612-80, English poet. 3. Samuel, 1835-1902, English novelist and satirist.

**but-ler's pan'try**, *n.* a service room between a kitchen and dining room. [1810-20]

**butt** (but), *n.* 1. the end or extremity of anything, esp. the thicker, larger, or blunt end considered as a base, support, or handle: *the butt of a rifle*. 2. an end that is not used or consumed; remnant: *a cigar butt*. 3. a lean cut of pork shoulder. 4. *Slang*. the buttocks. 5. *Slang*. a cigarette. [1400-50; late ME *bott* (thick) end, buttock, OE *butt* tree stump (in place names); akin to Sw *but* stump; cf. *burrock*]

**butt** (but), *n.* 1. an object of witticisms, ridicule, etc. 2. a target. 3. (on a target range) a wall of earth or other backstop located behind the targets to stop bullets, arrows, etc. 4. **butts**, a target range. 5. Obs. the targets to stop bullets, arrows, etc. -*v.t.* 6. to abut. -*v.t.* 7. to position or fasten an end (of something). 8. to join the ends of (two things); set end to end. [1350-1400; ME < MF *but* target, goal, prob. < ON *bútr* butt, from the use of a wooden block or stump as a target in archery, etc.]

**butt** (but), *v.t.* 1. to strike or push with the head or horns. -*v.i.* 2. to strike or push something or at something with the head or horns. 3. to project. 4. **butt in** (or **out**), to interfere (or stop interfering) in the affairs or conversation of others. -*n.* 5. a blow with the head or horns. [1150-1200; ME < AF *buter*, OF *boter* to thrust, strike < Gmc]

**butt** (but), *n.* 1. any of various units of capacity, usu. considered equal to two hogsheads. 2. a large cask for wine, beer, or ale. [1350-1400; ME *bote* < AF *bo(u)t(e)*; MF < OPr *bota* < LL *butta*, *butis*]

**butte** (byōōt), *n.* an isolated hill or mountain rising abruptly above the surrounding land, esp. in the western U.S. and Canada. [1650-60, Amer.; < North American F; F: low hill, mound]

**but-ter** (but'ār), *n.* 1. a soft whitish or yellowish fatty solid that separates from milk or cream when it is churned, processed for cooking and table use. 2. any of various other soft spreads for bread: *ap- ing and table use*. 3. any of various substances of butterlike consistency, as certain vegetable oils solid at ordinary temperatures: *cocoa butter*. -*v.t.* 4. to put butter on or in. 5. to apply a liquefied bonding material to (a piece or area), as mortar to a course of bricks. 6. **butter up**, to flatter, esp. so as to gain a favor from. [bef. 1000; ME; OE *butere* < L *būtyrum* < Gk *boutyron* = *bou-*, comb. form of *bous* cow + *-tyron*, *n.* der. of *tyros* cheese] -**but-ter-less**, *adj.* -**but-ter-like**, *adj.*

**but-ter-and-eggs**, *n.*, *pl.* **but-ter-and-eggs**. (used with a *sing.* or *pl.*) any of several plants whose flowers are of two shades of yellow, as the toadflax. [1770-80]

**but-ter-ball** (but'ār bōl'), *n.* 1. a chubby person. 2. Northeastern U.S. the bumblehead. 3. a small spherical pat of butter. [1930-35]

**but-ter bean** or **but-ter-bean**, *n.* 1. a variety of small-seeded lima bean, *Phaseolus lunatus*, grown in the southern U.S. 2. Midland and Southern U.S. any type of lima bean. [1810-20]

**but-ter-cup** (but'ār kup'), *n.* any of numerous plants of the genus *Ranunculus*, having glossy yellow flowers and deeply cut leaves. [1505-15]

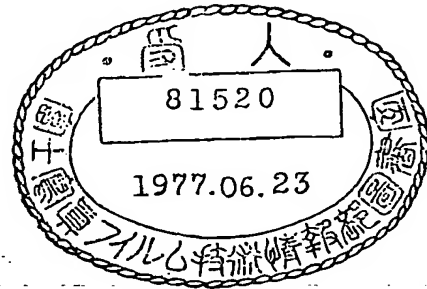
**but-ter-fat** (but'ār fat'), *n.* the fatty portion of milk, from which butter is made, consisting of a mixture of glycerides. [1885-90]

**but-ter-fin-gers** (but'ār fīng'gerz), *n.*, *pl.* **-gers**. (used with a *sing.* or *pl.*) a person who frequently drops things; clumsy person. [1830-40] -**but-ter-fin-gered**, *adj.*

**but-ter-fish** (but'ār fīsh'), *n.*, *pl.* (esp. collectively) **-fish-es**, (esp. for *kinds or species*) **-fish**. a small, flattened marine food fish, *Peprilus triacanthus*, of U.S. Atlantic coastal waters. [1665-75]

**but-ter-fly** (but'ār flī'), *n.*, *pl.* **-flies**, *v.*, **-fled**, **-fly-ing**. -*n.* 1. any of numerous flying insects of the order Lepidoptera that are active by day, characterized by clubbed antennae, a slender body, and broad, often conspicuously marked wings. 2. a person who flits aimlessly from one interest or group to another: *a social butterfly*. 3. **butterflies**, from one interest or group to another: *a social butterfly*. 4. **butterflies**, from one interest or group to another: *a social butterfly*. 5. **butterflies**, from one interest or group to another: *a social butterfly*. 6. **butterflies**, from one interest or group to another: *a social butterfly*. 7. **butterflies**, from one interest or group to another: *a social butterfly*. 8. **butterflies**, from one interest or group to another: *a social butterfly*. 9. **butterflies**, from one interest or group to another: *a social butterfly*. 10. **butterflies**, from one interest or group to another: *a social 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WEBSTER'S  
New  
Collegiate  
Dictionary

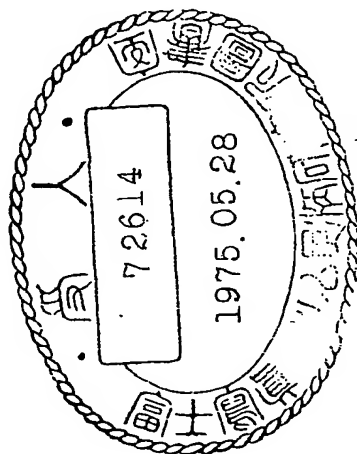
## 151

**b**utt vb [partly fr. *butt*, partly fr. *\*butr*] v: ABUT — used or against ~ vi 1: to place end to end or side to side overlapping 2: to trim or square off (as a log) at the : to reduce (as a cigarette) to a butt by stubbing or stamping  
**butt** n [ME; prob. akin to ME *buttok* buttock, LG *buto* OHG *bōzan* to beat] 1: BUTTOCKS 2: the large or thick part of something: a: a lean upper cut of the pork showing the base of a plant from which the roots spring c: the handle end of a tool or weapon 3: an unused remnant: the part of a hide or skin corresponding to the animal's head sides  
**butte** n [ME, fr. MF *bolte*, fr. OProv *bota*, fr. LL *butta*] a large cask esp. for wine, beer, or water 2: any of various liquid capacity; esp. a measure equal to 108 imperial gal  
**butte** \byüt- /n [fr. keltic, fr. MF *bute* mound of earth seen a backdrop] an isolated hill or small mountain with steep precipitous sides usu. having a smaller summit area than a butte  
**but-ter** \'bat-ər /n [ME, fr. OE *butere*; akin to OHG *buten* both fr., a prehistoric WGmc word borrowed fr. L *butyrum* fr. Gk *butyron*, fr. *bous* cow + *tyros* cheese; akin to Av *tūm* — more at cow] 1: a solid emulsion of fat globules, air, and made by churning milk or cream and used as food 2: a substance as: a: any of various fatty oils remaining near at ordinary temperatures b: a food spread made from fruit or other food <apple ~> 3: FLATTERY — butter-*ter-less* *n*  
**but-ter** vt 1: to spread with or as if with butter  
*but-ter-and-eggs* \-tər-ə-'eggz-, -'ægz-/ *n pl but sing consir*: a common European perennial herb (*Linaris vulgaris*) of the dragon family that has showy yellow and orange flowers and is a naturalized weed in much of No. America — call *roadflax*  
**but-ter-bean** \'bat-ər-'bōl/ *n* 1: a chubby person 2: BUTTER BEAN *n* 1: WAX BEAN 2: LIMA BEAN: AS A CHIEF & MIDLAND: a large dried lima bean B: SIEVA BEAN 3: shell bean esp. as opposed to a snap bean  
**butter clam** *n*: either of two large delicately flavored (*Saxidomus nuttallii* and *S. gigantea*) of the Pacific Coast America  
**butter-cup** \'bat-ər-'kəp/ *n*: any of numerous plants *Ranunculus* of the family Ranunculaceae, the buttercup with yellow flowers and pedately lobed leaves  
**butter-fat** \'bat-ər-'fat/ *n*: the natural fat of milk and chief const of butter consisting essentially of a mixture of glycerides, butyrin, olein, and palmitin  
**butter-fingered** \-'fing-gəd/ *adj*: apt to let things fall through the fingers: CARELESS — butter-finger-*s* \-'fing-gə-s/ *pl sing or pl in consir*  
**butter-fish** \-'fish-/ *n*: any of numerous mostly percoid fish family Stromateidae) with a slippery coating of mucus  
*but-ter-fly* \-'Jīl-/ *n*, often *atlib* 1: any of numerous bodied diurnal insects (order Lepidoptera) with large brightly colored wings 2: something that resembles or acts like a butterfly; esp.: a person chiefly occupied with the pleasure of swimming strokes executed in a prone position simultaneously 4: *pl*: a feeling of hollowness or emptiness caused esp. by emotional or nervous tension or anxious anxiety  
**butterfly** vt -fled; -fly-ing: to split almost entirely apart <a butterflyed steak> <butterflied shrimp>  
**butterfly bush** *n*: BUDDLEIA  
**butterfly chair** *n*: a chair for lounging consisting of a cloth supported by a frame of metal tubing or bars  
*but-ter-flyer* \'bat-ər-'Jīl-(ə-)r/ *n*: a swimmer who specializes in the butterfly  
**butterfly fish** *n*: a fish having variegated colors, broad fins, or both: as a: a European blenny (*Blenius ocellatus*): FLYING GURNARD c: any of the family Chaetodontidae) brilliantly colored spin-finned fishes of tropical seas with deep body and finely granular covered with scales  
**butterfly valve** *n*: 1: a double clack valve 2: a damper in a pipe consisting of a disk turning on a diametrical axis  
**butterfly weed** *n*: an orange-flowered showy milkweed (*Furcraea tuberosa*) of eastern No. America  
**but-ter-milk** \'bat-ər-'milk-/ *n* 1: the liquid left after being churned from milk or cream 2: cultured milk made addition of suitable bacteria to sweet milk  
**but-ter-nut** \-'nut-/ *n* 1 a: the edible oily nut of an American (*Juglans cinerea*) of the walnut family b: a tree: the butternuts 2 a: a light yellowish brown b: *pl*: a color overall dyed brown with a buttermut extract c: a partisan of the Confederacy during the Civil War  
**but-ter-scotch** \-'skäch-/ *n* 1: a candy made from brown corn syrup, and water; also: the flavor of such candy moderate yellowish brown  
**butter up** vt 1: to charm or beguile with lavish flattery of  
 CAJOLE  
**butter-weed** \'bat-ər-'wēd/ *n*: any of several plant yellow flowers or smooth soft foliage: as a: HORSEWEED a: American ragwort (*Senecio glabellus*)  
**but-ter-wort** \-'wart-, -wō(ə)-tər/ *n*: any of a genus (*Pinguicula*) herbs of the bladderwort family with fleshy greasy leaves produce a viscid secretion serving to capture and digest insects  
**but-tery** \'bat-ər-'rē-, 'bat-ër-/ *n*, *pl*-teries [ME *boterie*, *botrie* cask, but — more at BUTT] 1: a storeroom for provisions a chiefly dial: PANTRY b: a room (as in an English inn) stocking provisions for sale to students  
**but-tery** \'bat-ər-'rē/ *adj* 1 a: having the qualities, coming or appearance of butter b: containing or spread with butter: marked by flattery  
**butt hinge** *n*: a hinge usu. mortised flush into the edge of  
**butt in** vt: to meddle in the affairs of others: INTERFERE  
**butt-in-ski** also **butt-in-ski** \'bat-'in-skē-/ *pl*-skies (one -sky-, -ski (last element in many Slavic names)): one butting in: a troublesome meddler  
**joint** *v*: a joint  
**lock** \'bak-'ək-/ *n* [M]  
**hip** that forms one  
**the seat of the**  
**'bat-'n** *n*, often  
**trust** — more at BUTT  
**article** (as of clothing)  
**ugh** a buttonhole or  
**bearing** a stamped  
**something** that resemble  
**growth** of a plant or  
**room** 2: the ter  
**small globe** of me  
**guard** on the tip of  
**of the** *n* as sp.  
**mon** PRECISELY  
**'bat-'n** *v* b  
**to furnish** or decorat  
**—** often used w  
**(tips)** to prevent spee  
**fasterening** (<this dress  
**'n** — **but-ton-**  
**ton-bush** \'bat-'n-'boš/  
**-ton-bush** \-'bush-,  
**(idealists)** of the mad  
**-ton-down** \-'daun-/  
**lined** to the garment  
**-ton-down** *n* *pl* **but**  
**dress** and behavi  
**-ton-hole** \'bat-'n-'ho/  
**tion** is passed  
**tonhole** *v* 1: to f  
**tonhole stitch** — **bu**  
**tonhole** *v* [alter. of  
**as if** by holding on t  
**tonhole stitch** *n*:  
**firm edge** (as on a bu  
**-ton-hook** \'bat-'n-'hu/  
**-tons** through button  
**ions** pass over  
**back** toward the li  
**tion** quail *n*: any of  
**family Turridae**) that  
**with** the hind toe b  
**of bastards**  
**tion snakeroot** *n*:  
**ants** with spikes of ro  
**veral** usu. prickly her  
**-ton-wood** \'bat-'n-'wu/  
**-tony** \'bat-'n-'ē-, 'bat'  
**resisting** a button-  
**of** (*Butor*, fr. *butor*)  
**of butores: fr. *butor*)  
**scary** or wood for st  
**wall** or building 2:  
**stress**: as: a: a projec  
**a horny** protuberance  
**see HOOF illustration**  
**ce trunk** or a thick  
**something** that suppo  
**cause of peace** —  
**stress** *v*: to furnis  
**SUPPORT, STRENGTH**  
**shaft** *n*: a target  
**stock** \'bat-'stāk-/  
**er of the breech**, mech  
**weld** *n*: a butt jo  
**tt welding** *n*:  
**'ly** \'bat-'ē/, *n*, *pl* **but**  
**flow workman**: CHU  
**ut** \'bat-'ūt-/ *n* [nat  
**ENER table**  
**'ly** \byüt-'l-/ *n* [*IS*  
**ivalent radicals**, C/H  
**yl trademark** — used  
**polymerizing isotub**  
**yl alcohol** *n*: any of  
**on butanes** and used  
**ylate** \byüt-'lāt-/  
**oup into** (fr. compoun  
**olated** hydroxy-to  
**ylline phenolic** co  
**ylene** \byüt-'lē-/  
**yl of the ethylene** su  
**ryl or butyro-**  
**nyal** *n*:  
**aceous** \byüt-'ā/  
**ITER** 1: resembling  
**yielding** a buttery su  
**tyral** \byüt-'l-/  
**tyl-al-de-hyde** \-'bal/  
**dyches** C<sub>6</sub>H<sub>5</sub>O used  
**ty-rate** \byüt-'lāt-/  
**tylic** \byüt-'lī-k-/  
**producing** butyric a  
**tyric acid** *n*: either  
**a normal acid** of un  
**piration**  
**on** \'bak-'sm-/ *adj*  
**Eagan** to bend —  
**LE** b: offering little**



# 化学大辞典

化学大辞典編集委員会編



7

ENCYCLOPAEDIA  
CHIMICA

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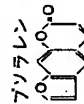
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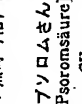
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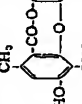
の別称。酸化により金属原子が不足して異常半導体となるのでこのようによばれる。



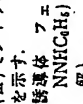
ブソラレン [英 psoralen 独 Psoralen]  
 $C_{11}H_8O_3 = 186$ , クマリン誘  
 体の一つ、存在 ヤム科  
*Psoralea corylifolia* L.の根  
 子から得られる。製法 6-オキシクマリンを還元し  
 元した6-オキシクマリンをパラジウムで脱水素し  
 たジドプロブソラレンをパラジウムで脱水素し  
 て得られる。性質 粉末状結晶(希エーテル、石  
 油から再結晶)、熔点  $169 \sim 170^\circ$ 。エーテル、石  
 油エーテル、水に微溶；エタノール、クロロホル  
 ムに可溶。水酸化ナトリウム水溶液に加熱時不  
 溶；鹼性水酸化ナトリウムと同反応する。  
 臭：動植物の腐敗臭、臭気は臭素臭に似る。



フソロムさん ー酸 [Psoromic acid  
Psoromsäure]  $C_{18}H_{14}O_8=358$ , 地衣デブ

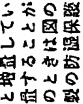


CHO COOH Wain. 性質 無色針  
 状品(エタノールに再結晶)。融点 285°。エ  
 セトンに可溶。過硫酸で血赤色を呈する。塩化  
 テル、エタノール、クロホルムに難溶：ア  
 鉄(Ⅲ)でプロピオン酸色を呈する。サラン紙で覆  
 ったガラス瓶で貯蔵する。

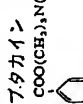


メチルエステル  $C_{17}H_{35}O_6(COOCH_3)$  : 針状晶  
(アセトンから再結晶)。融点  $211^\circ$ 。塩化鉄  
(Ⅲ)でカッ赤色を呈する。(桑田 二)

ぶ た 豚 [Pig, 與 Wägelchen]  
吸湿性試料を量るときき用いる一種の防護管の俗称。吸湿性の試料を白金ボートに入れて空気で量るときは、試料が湿気を吸収して込んだ



ことができる。キャップの先は毛管になっているので真空中で乾燥してもキャップが抜けなくなる。ブタは形の上からつけられるようなことはない。ブタは形の上からつけられた名称で、そのほかブタの子、虫などよばれることがある。——ヒョウコ型漏斗（坂本秀明）



元するか、または  $\beta$ -アミノ安息香酸ナトリウムとジブチルアルミノブゾルクロリドを縮合させ、 $\beta$ -アミノ安息香酸ナトリウムとジブチルアルミノブゾルクロリドを縮合させて遊

せる。性質 無色の油状液体。用途 周所麻酔薬に用いられる。

誘導体 硫酸塩、硫酸ブタカイン (NTP)  
 $(C_8H_{15}N_2O_6S_2 \cdot H_2SO_4)$ ：無色の白色結晶性物質  
 融点  $100 \sim 103^\circ$ 。水、温塩水に難溶；エ  
 アセトンに易溶；クロロホルムに難溶；エ  
 ーテルに不溶。局所麻酔薬として表面麻酔  
 に眼科、耳鼻科で用いられる。暗所に密閉  
 してたくわねる。  
 (坂田三)

ふたごがこねたねつりうけい 二子形熱量計  
[英]twin calorimeter 大Swilling'skolorime-  
ter 熱量計の一種、大小、形状、構造等  
を同じく2個の熱量計より成り、両者の温度差を  
電熱計(数ナニ〜数千対を並列)で測定して熱当  
量を算出する。1) 反応熱 2) 溶解熱 3) 混合熱 4) 希  
釈熱などの精査測定 5) 二つの類似した試料と  
他との比較 6) 二つの試料の物理的性質などの比  
較に用いられる。1)~4) の目的には、一方では  
の熱量計Aで反応、溶解、混合、希釈などの過  
程を行なう。この過程で発生するAで温度が下  
がるから熱電対に起電力を生ずるが、Aで過程が行  
なうと同時にAに附いた電熱器に電流を通じ  
て常に熱電対に加えた電圧を生じないやうにして  
行く。求めめ熱量は加えた電圧エネルギーとして  
決定される。過程が加熱の場合には、他の熱量計  
Bに電圧エネルギーを加えて熱電対が生ずるや  
うにする。AおよびBの槽温が全く等しいとい  
うから、求める熱量は加えた電圧エネルギーにつ  
いて等しくなる(電圧エネルギーの測定は二つの試  
料は電気熱計算を参照)。5) の目的には二つの試  
料をそれぞれAおよびBの熱量計に入れ、等しい  
電圧エネルギーを加えてその通過量から比熱  
の差を求める。6) の目的には二つの試料をそれぞ  
れAおよびBの熱量計中で溶解し、熱電  
対および粗算ながら温度の下の傾向のある、等  
しい電圧エネルギーを加え、常に両方を同  
じ温度に保てば溶解熱の差は加えた電圧エネ  
ルギーに等しい。2) の同じジーンをもちよ  
り、中央切りに一つのジョービンを中心と  
して中仕切りをつくる形の二子形熱量計であ  
る。熱電対を用いる代わりにAおよびBに全く等  
しい抵抗通電計を入れて、その抵抗の差を利用す  
る方法もある。いづれにしても二子形熱量計で  
求める熱量は、外部的に熱交換に基づく誤差が  
きわめて小さい(1%以下)である。  
[日]二子形熱量計(1958)

ふたごびんそ 双子元素 [twin elements]  
原子量がほぼ等しく、よく似た性質をもっている1対の元素を双子元素ということがある。原子重、ニッケル(原子重: 58.71)とコバルト(原子重: 58.94)は原子量も近似し、性質も似ているので、例とすることができ、(組付 破)

ブタサイト [灰Butacite] アメリカ E. I. du Pont de Nemours & Co. Inc. 製のブタタ

がある。——ポリビニルブチラール樹脂の商品名。フレック状およびシート状

：ブタジイン、ジアセチレン、ピアセチレン  
〔*n*-butadiene, diacetylene, biacetylene 並  
Butadiin, Diacetylen, Biacetylen]  $C_4H_2 =$   
50.1, 電弧法\*によりメタン  
： $CH \equiv CC \equiv CH$

他のアセチレン同族体とともに副生する。製造法は1,4-ジクロロブチンをナトリウムアミドまたは水酸化アルカリで脱塩化水素して得られる。性質 質 0.1 以下では安定であるが、常温では不安定な気体。凝固点  $-36.4^{\circ}$ 、沸点  $10.3^{\circ}$ 、 $d_4^{20}$  0.7364,  $n_D^{20}$  1.4198。常温では重合してカッセル焼石、無定形の不溶物になる。 $-70^{\circ}$ で数時間保存することができ、アセトリンに溶解；クロホルムに可溶。液体アセトリンは  $0^{\circ}$ で同容積のアセトリンに溶解する。アノニアを逐次二回(1)に反応してカッセルない或カッセルの塩化物性液体を生ずる。エタノール溶液では水酸化アルカリの存在でエタノール1分子の付加物を与える。

$$\text{ROH} + \text{CH} \equiv \text{CC} \equiv \text{CH} \longrightarrow \text{ROCH} = \text{CHC} \equiv \text{CH}$$

$\text{CH}_2=\text{CC}(\text{CH}_3)=\text{CH}-\text{N}(\text{CH}_3)_2$  誘導体 銀塩  $\text{C}_6\text{Ag}_3$ : 爆発性、トウ黄色の固体。長期保存するとカッ色になる。  
(参看五三)

ブタジエン (英butadiene 但Butadien)  
(1) 二重結合2個をもつ炭素原子数4の鎖状炭化水素をいい、1,2-および1,3-ブタジエ

は、2つの異性体があるが工業的には後者のほうがはるかに重要なので、単にブタジエンとい  
えば、1,3-ブタジエンをさす場合が多い。1,2-  
ブタジエンについてはメチルアレンの項を参  
照。

(2) 1,3-ブタジエン、ジビニル、ビビニル、  
ビニルエチレン、ポリレン、エグレン（英）  
1,3-butadiene, butadiene, divinyl, bivinyl,  
vinylethylene, pyrolylene, erythrene 德  
1,3-Butadien, Butadien, Divinyl, Bivinyl,  
Vinyläthylen, Pyrolylen, Erythren 法  
 $\text{CH}_2=\text{CHCH}=\text{CH}_2$  = 54. 1. 1863 年にはじ

によって生ずることが知られた。7-ゼレン油の熱分解  
 のアミルアルコールからメチルブテンを提して生  
 じたものと推察される。次いで1866年にアゼ  
 ンとエチレンを赤熱鉄管中に通す  
 ときに生ずることが、また1873年には圧縮し  
 た石炭ガス中に含まれることが、更に1886年  
 にエチレン、ペンテン、ヘキサンなどの熱分  
 解生成物中に存在することが知られた。製法  
 20世紀初めに専ら合成ゴム原料としての需

フタシエン

[illegible]

ヒニルエーテルもしくはアセトアルデヒドモエチルエーテルを熱分解する。3) 脂肪アセトアルデヒドを熱分解する。4) 石油留分の熱分解(特にエチレン製造のための)における生成ガスから分離する。以上の諸法のうち現在、最大生産額であるアメリカではアチンおよびブタンを原料とする方法が多く採用され、また分解ガスからの抽出も実施されている。アルコールから

用いる方法は現在休止中である。一方、ヨーロッパにおいては、分解ガスからの抽出が大きな割合を占めているほか、アセチレンから出発する方法もなお採用されている。わが国では日本化成工業 KK(四日市)がアセチレンおよびブタンの脱水素法、また日本石油化学 KK(川崎)が精製結晶からの抽出法を本質化して、(4) 分離・精製法 実験室的には液体亜硝酸と反応させて選

吸的に結晶性の付加化合物、スルホン  $\text{CH}_2\text{CH}=\text{CHCH}_2\text{SO}_3\text{H}$  を形成させ、これを  $120^\circ\text{C}$  で熱分解して軽油を得る。工業的にはガス状で酢酸アセトフェンと水酸基とを向接基として選択的に抽出して軽油と向接基を脱離させる。本法は CAA 法 (caupous ammonium acetate process) という。アルパラニを加えて抽出蒸留する方法もある。構造 5 の電子移動結合が示されては、アジメチレンは二つの二重結合が供出された最も簡単な共役二重結合系である。このような系においては二つの二重結合の  $\pi$  電子が中央の単結合を通して互いに作用する。結果、中央の二重結合は若干二重結合性をもち、結果、両側の二重結合は多少単結合性をもつことになる。このことは  $\beta$  ジェンの炭素-炭素単結合の結合距離の実測値が  $1.40 \text{ \AA}$  で、通常の二重結合の結合距離の値  $1.34 \text{ \AA}$  より短い事実と一致する。

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